

Patent Claims

1. Pressure sensor, comprising:

5 a measuring cell having

 a base plate (1),

 a measuring membrane (2) loadable with a pressure to be measured and
10 connected along its edge with the base plate, and

 at least one means (3, 4) for converting pressure-dependent deformation
 of the measuring membrane (2) into an electrical quantity;

15 an electrical circuit (5) for registering the electrical quantity; and

 a capsule (10) having

 a capsule body (8) and a sealing element (9), with which the capsule (10)
20 is hermetically sealed along a joint, wherein the capsule encloses the
 circuit for protecting such from moisture, and wherein the joint of the
 capsule (10) is mechanically decoupled from the base plate (1).

25 2. Pressure sensor as claimed in claim 1, wherein the base plate of the
 measuring cell comprises a crystalline or ceramic material, especially
 corundum.

 3. Pressure sensor as claimed in claim 1 or 2, wherein the electrical
 quantity is a capacitance between electrodes (3, 4), respectively, on the

measuring membrane (2) and on the base plate (1), or a deformation-dependent resistance.

4. Pressure sensor as claimed in one of the claims 1 to 3, further
5 comprising: a housing (16), in which the measuring cell is axially clamped, wherein the axial clamping forces of the measuring cell are not transferred through the joint of the capsule (10).

5. Pressure sensor as claimed in one of the preceding claims, wherein the
10 capsule (10) comprises a ceramic or metal material, especially Kovar.

6. Pressure sensor as claimed in one of the preceding claims, wherein the capsule (10) is held by electrical connection lines (6, 7), which extend between the capsule and the measuring cell.

15 7. Pressure sensor as claimed in one of the preceding claims, wherein the capsule (10) and/or the rear face of the base plate have/has at least one projection (13), by way of which a defined separation is maintained between the rear face (11) of the base plate and the capsule (10).

20 8. Pressure sensor as claimed in claim 7, wherein the at least one projection (13) is engaged in a complementary cavity (12) on the base plate and/or on the capsule.

25 9. Pressure sensor as claimed in one of the preceding claims, wherein sections of surfaces of the measuring cell and capsule are treated to be hydrophobic.